

# The Forests and Forest Industry of South Carolina



Scott Danskin  
South Carolina Forestry Commission

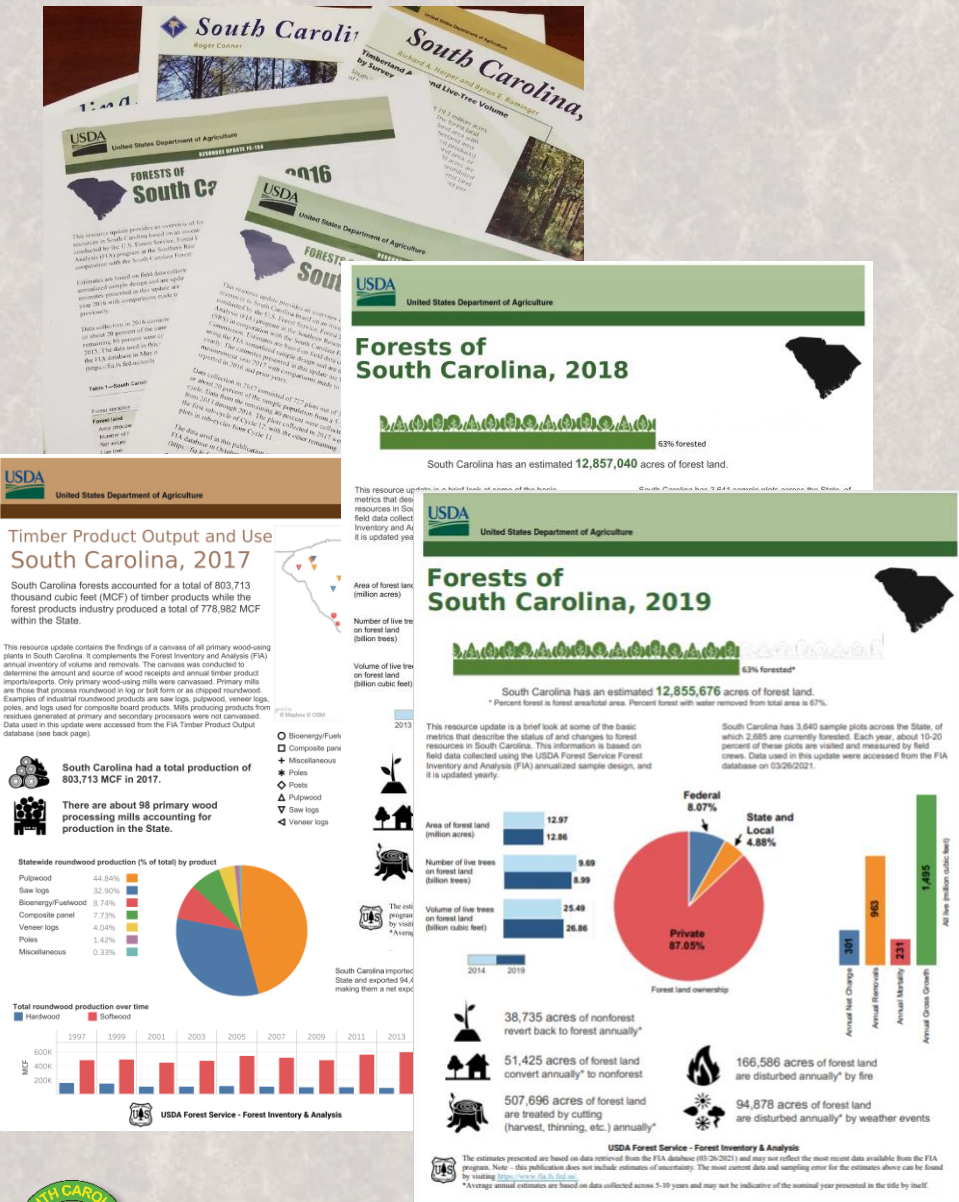


# South Carolina has more wood than has ever been recorded!

- Net Volume of Live Trees (>5inch)
  - 26,205.1 million cubic feet in 2017
  - 26,608.2 million cubic feet in 2018
  - 26,855.8 million cubic feet in 2019

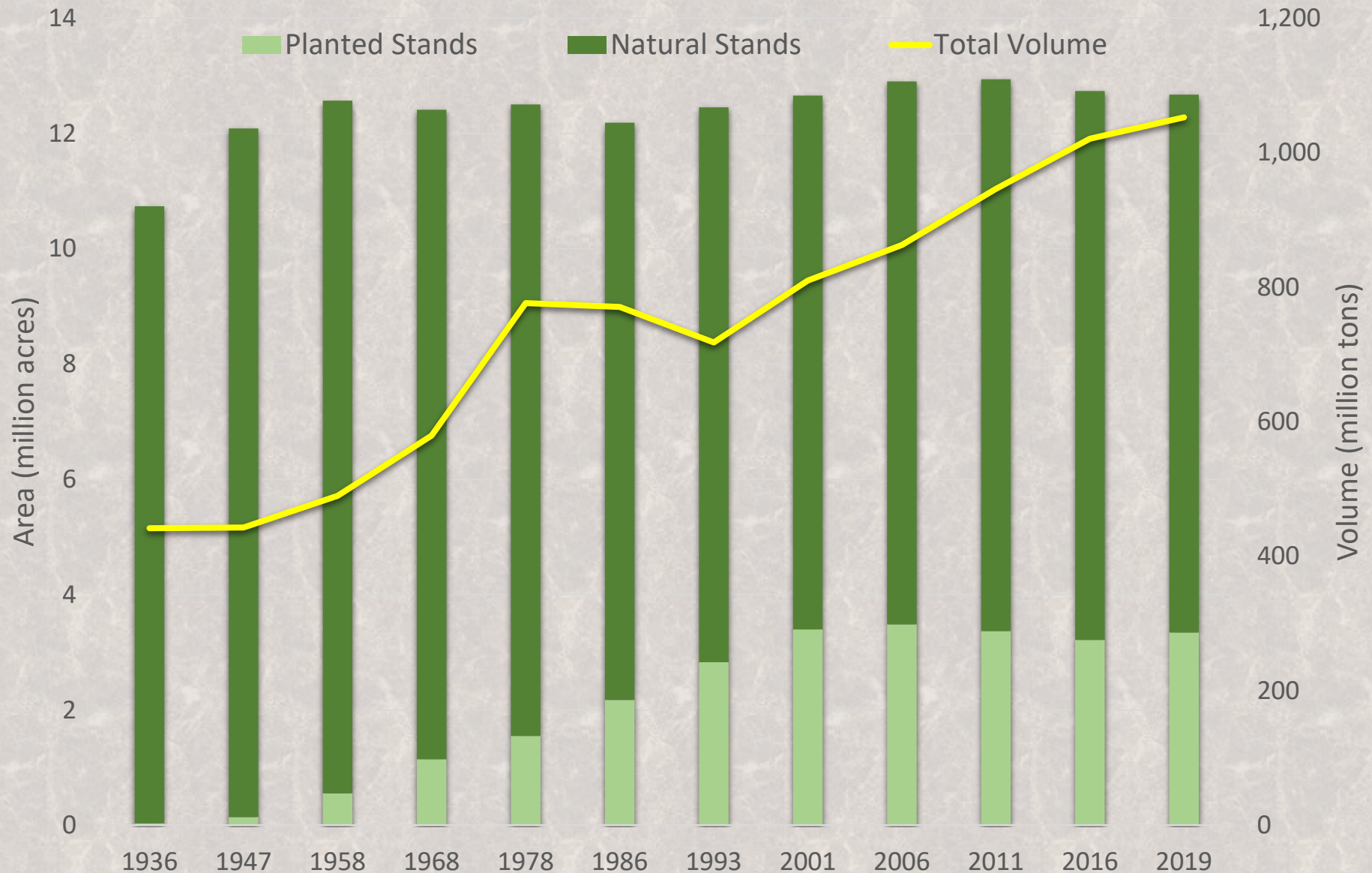
However, acreage overall continues to decrease

- Area- Forest land
  - 13.1 million acres in 2012
  - 12.91 million acres in 2016
  - 12.86 million acres in 2019

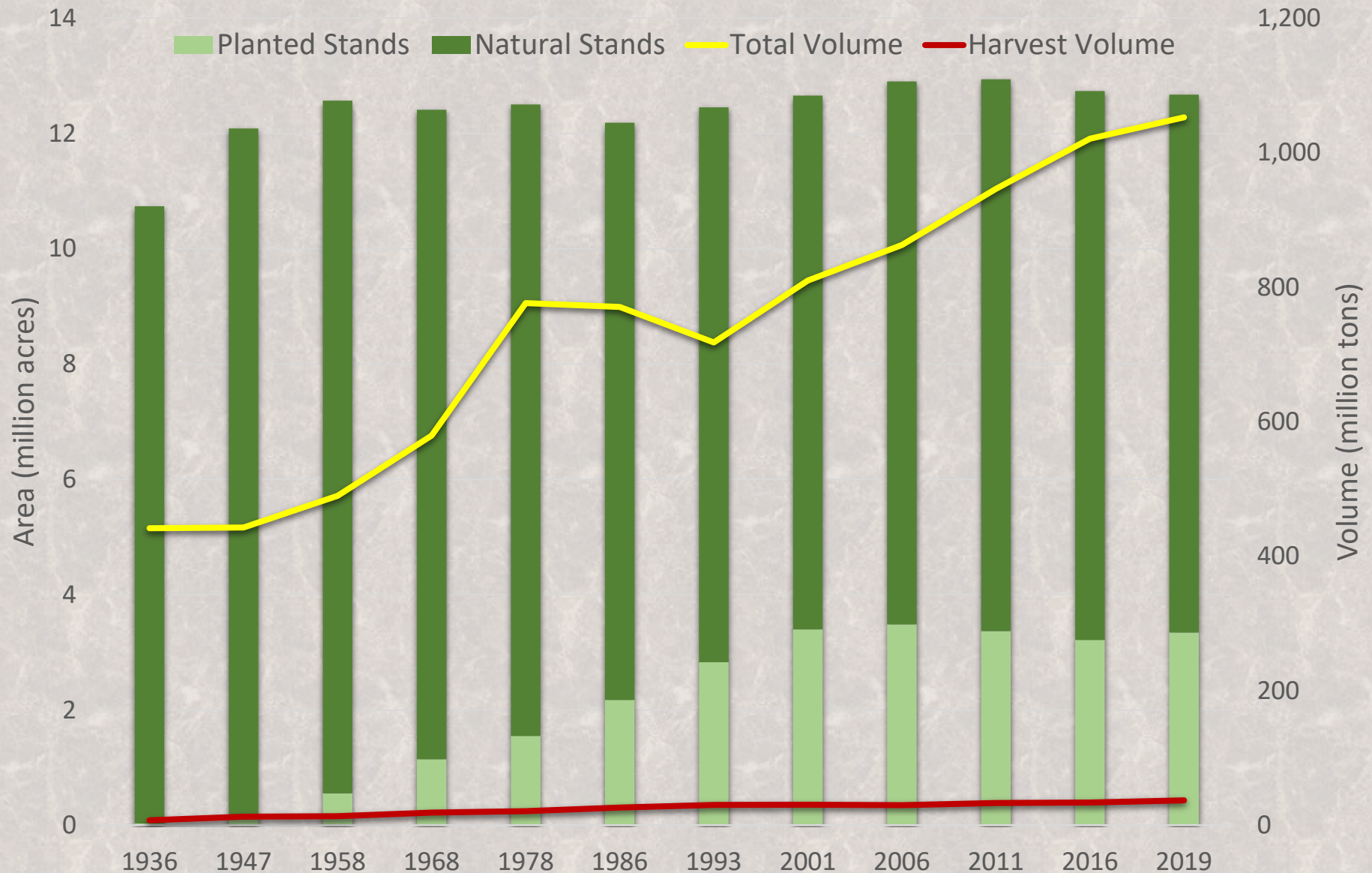




# Timberland area and live-tree volume, South Carolina

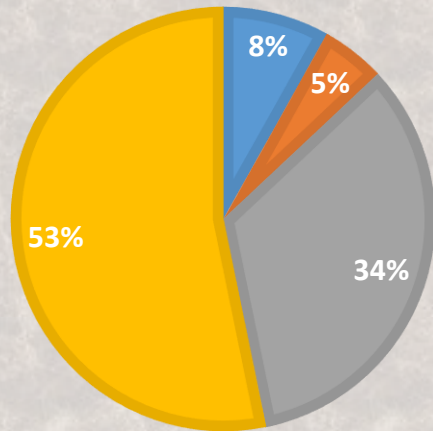


# Timberland area and live-tree volume, South Carolina



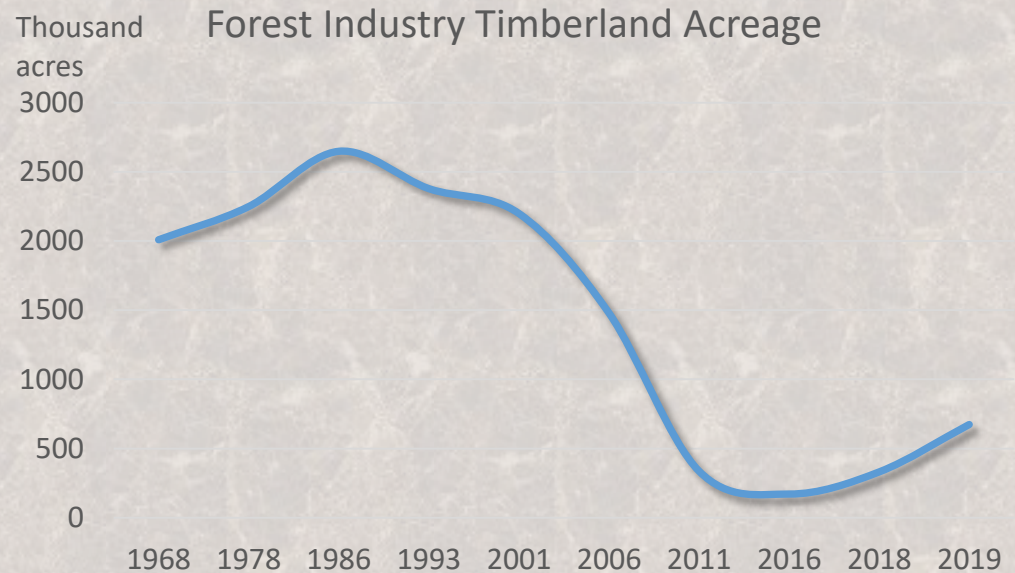
# Land ownership in South Carolina, 2019

■ Federal      ■ State and Local  
■ Corporate    ■ Individual

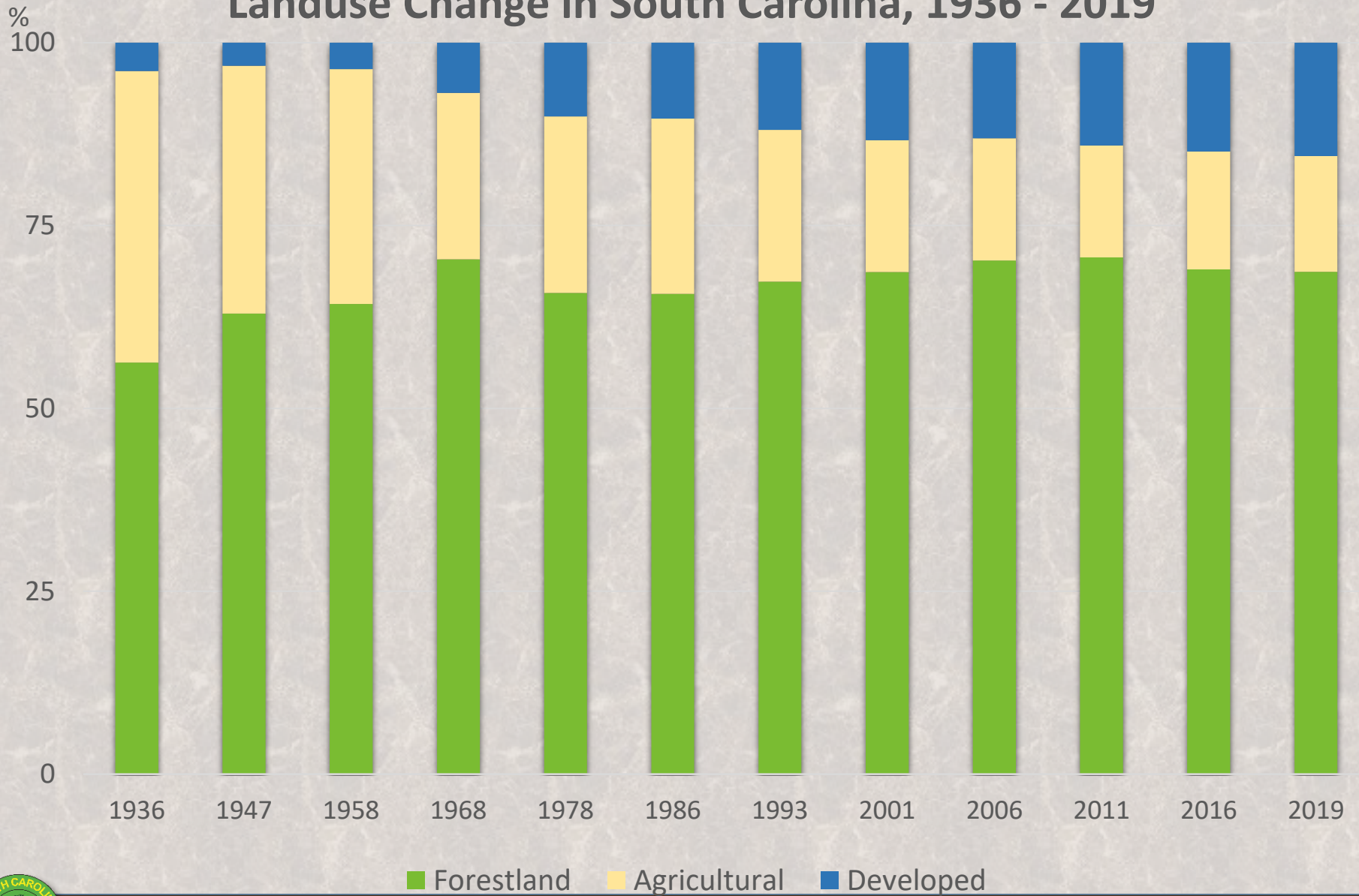


11.2 million acres (87%) Privately owned and produce 96% of the state's timber supply

Forest industry has largely divested land holdings, from a high of 2.6 million acres (1986) to 137,000 acres (2014)



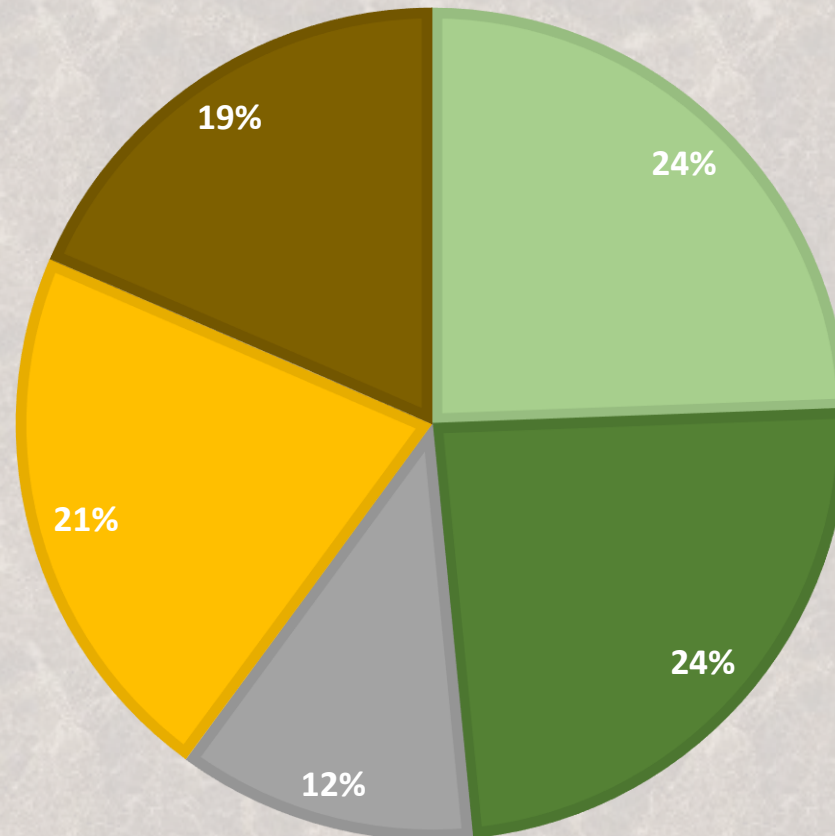
## Landuse Change in South Carolina, 1936 - 2019





## FOREST TYPE BY ACREAGE, SOUTH CAROLINA 2019

- Natural Pine
- Planted Pine
- Mixed Pine/Hardwood
- Upland Hardwood
- Bottomland Hardwood



# Species count by individual species\*

## Most common trees, South Carolina 2019



Species	Total Count	Percent
loblolly pine	820,290,403	47.90%
sweetgum	186,604,494	10.90%
water oak	72,098,720	4.21%
red maple	67,211,137	3.93%
longleaf pine	66,769,935	3.90%
swamp tupelo	48,888,684	2.86%
yellow-poplar	42,408,040	2.48%
white oak	37,602,957	2.20%
laurel oak	27,326,812	1.60%
shortleaf pine	24,352,440	1.42%
southern red oak	18,089,596	1.06%
winged elm	17,192,327	1.00%
Grand Total	1,712,374,426	

*\*species count for all live trees, 5inch DBH and greater*





# Timberland Acreage of Southern Yellow Pine, SC 1978



# Timberland Acreage of Southern Yellow Pine, SC 1986



# Timberland Acreage of Southern Yellow Pine, SC 1993





# Timberland Acreage of Southern Yellow Pine, SC 2001



# Timberland Acreage of Southern Yellow Pine, SC 2006



# Timberland Acreage of Southern Yellow Pine, SC 2011





# Timberland Acreage of Southern Yellow Pine, SC 2016



# Timberland Acreage of Southern Yellow Pine, SC 2018

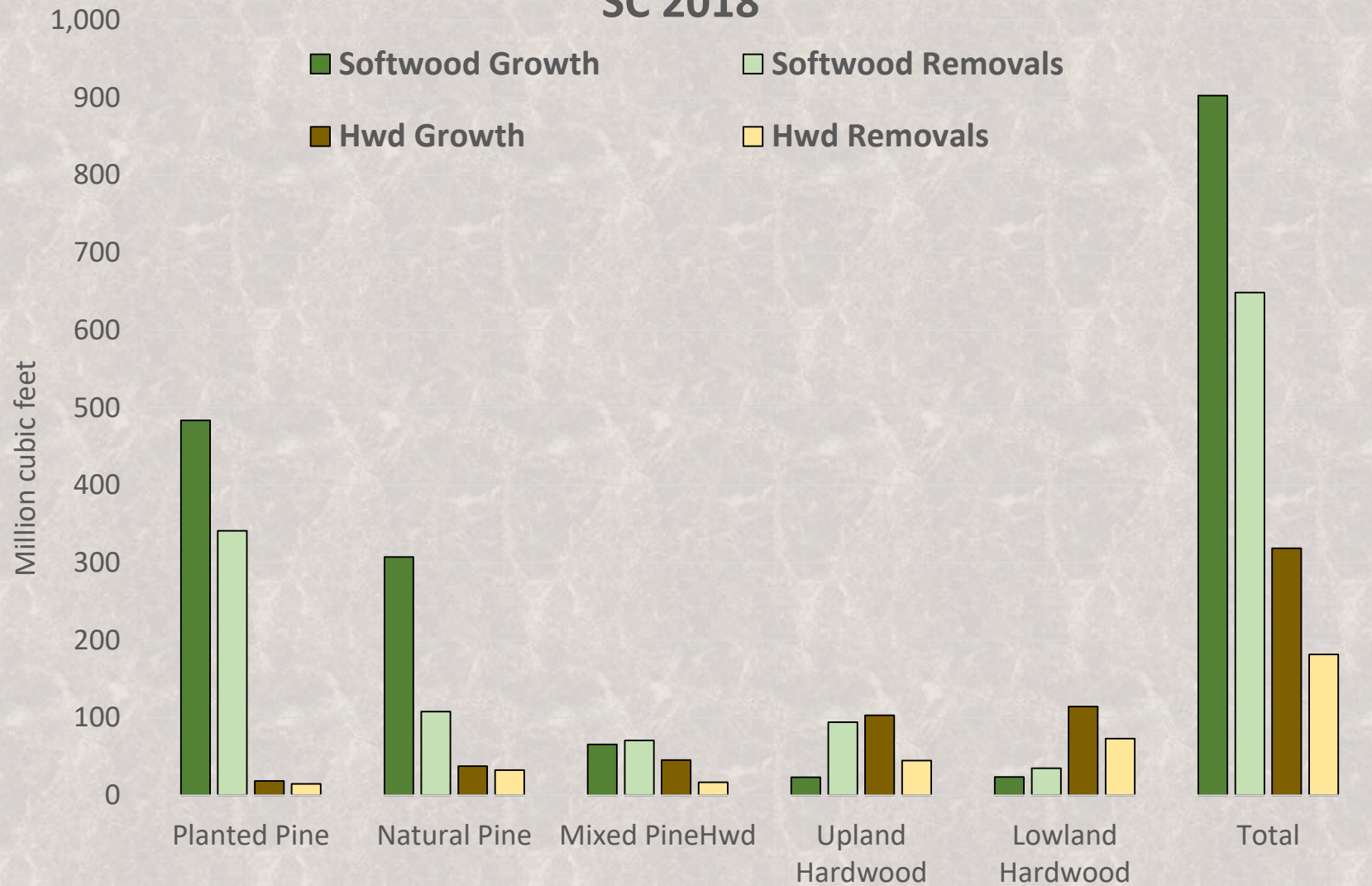


# Timberland Acreage of Southern Yellow Pine, SC 2019





## Growth and removals by management type SC 2018





# The Forests Products Industry





# A wooden map of wood-using mills

## Primary Forest Product Mills, South Carolina, 2020

### Legend

- ★ Pulp/Paper
- Chips
- Panels
- Composite Panels
- Sawmills
- † Poles, Posts, Pilings
- ☎ Mulch/Shavings
- Veneer
- Biomass
- ≡ Log Export Yards
- ⊕ Other



income. Compared to other leading industries in South Carolina, forestry ranks:  
 #1 in jobs;  
 #2 in labor income; and  
 #3 in direct economic output

Your company makes an invaluable contribution to South Carolina's allied forest products industries, which together generate a **\$21 billion impact** on the Palmetto State's economy.

*Fire & Pine*  
 Proudly Made in  
 Ridgeland, South Carolina  
[WWW.FIREANDPINE.COM](http://WWW.FIREANDPINE.COM)





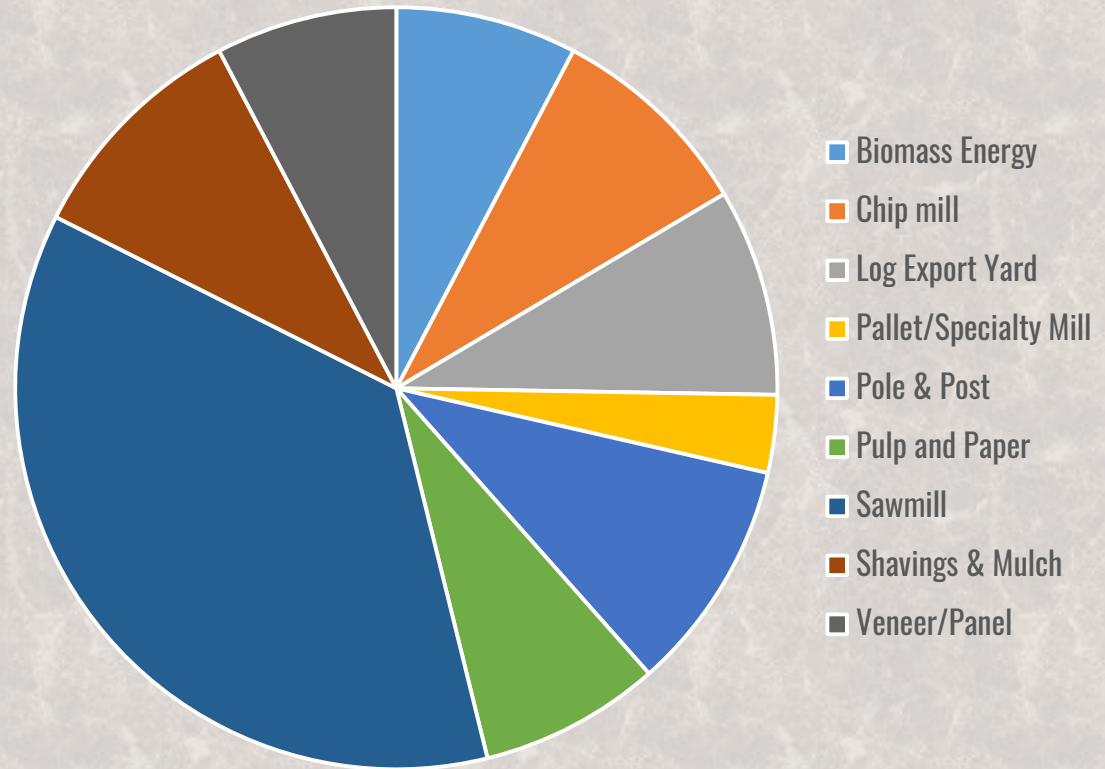
# Primary and secondary mills are constantly changing



# Primary mills, 2020

Type of Mill	Total
Biomass Energy	7
Chip mill	8
Log Export Yard	8
Pallet/Specialty Mill	3
Pole & Post	9
Pulp and Paper	7
Sawmill	33
Shavings & Mulch	9
Veneer/Panel	7
<b>Grand Total</b>	<b>91</b>

Mill Types of South Carolina, 2020

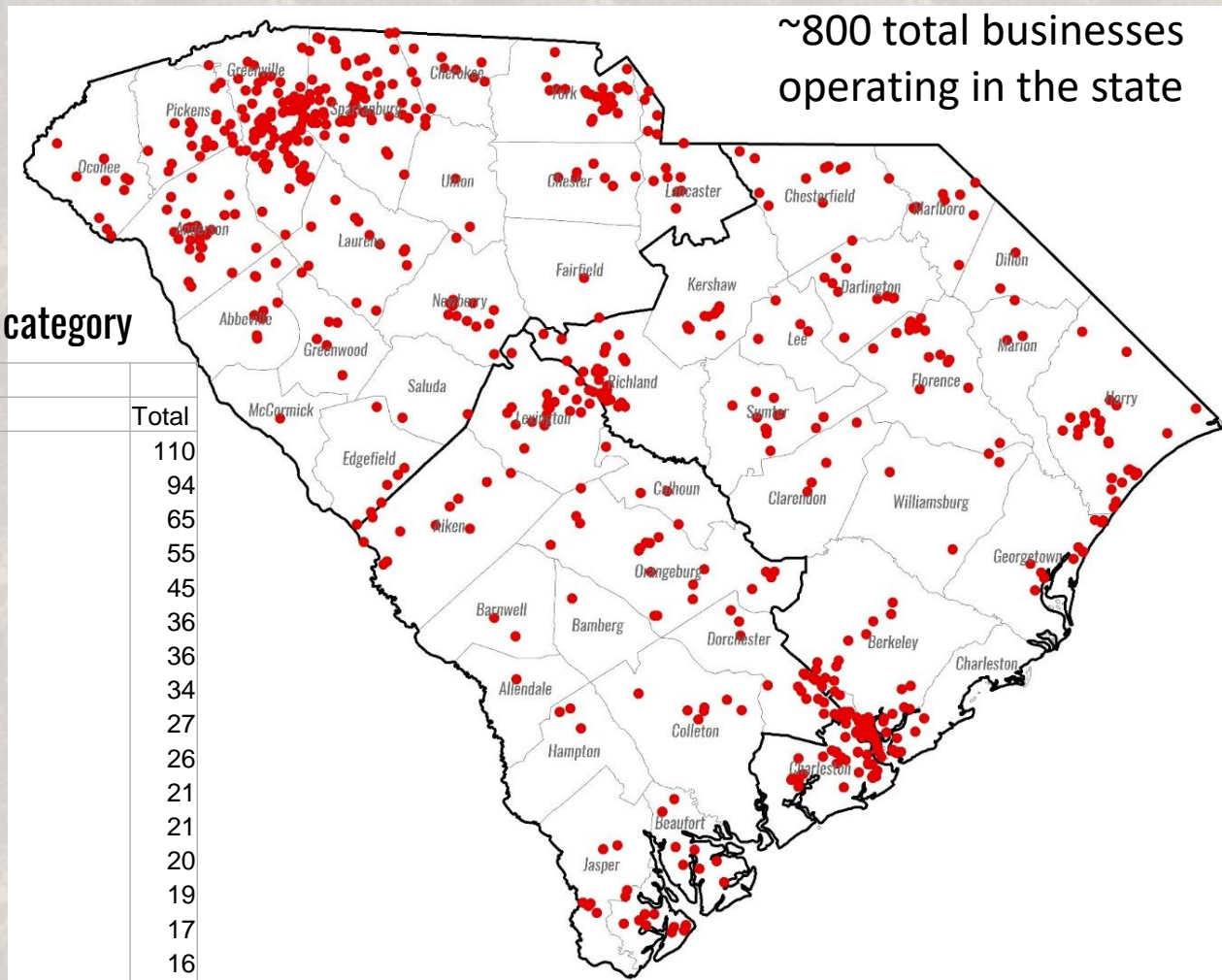


<http://www.state.sc.us/forest/refind.htm>



# Secondary wood-using mills

~800 total businesses  
operating in the state



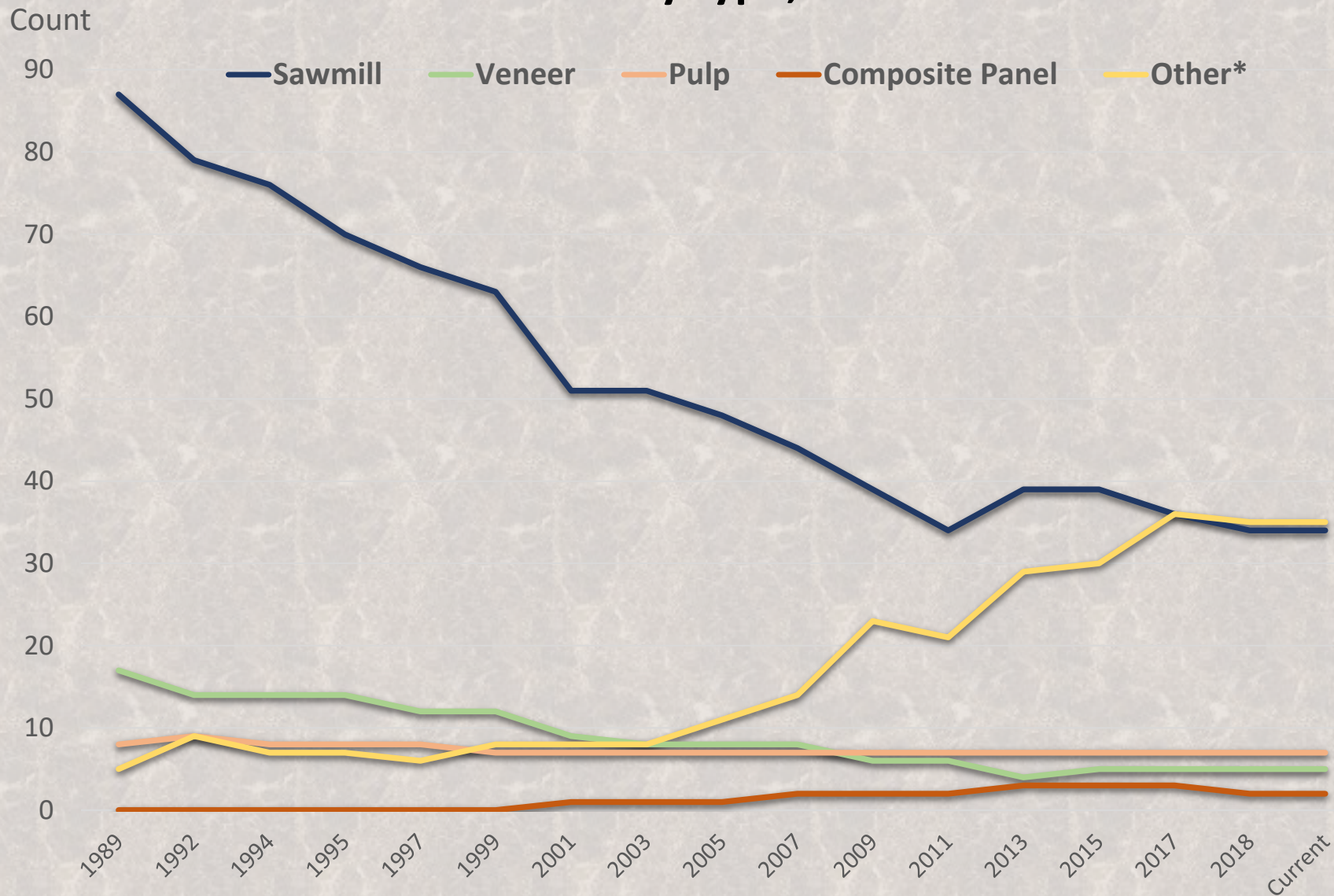
## Most common secondary businesses by category

Count of Category	
Category	Total
Cabinetry	110
Cabinetry Furniture	94
Millwork	65
Furniture	55
Paper Products	45
Other Wood Products	36
Furniture Cabinetry	36
Industrial Products & Suppliers	34
Millwork Cabinetry	27
Pallets/Crates	26
Millwork Furniture	21
Other Wood Products Cabinetry	21
Buildings/Structures	20
Pallets/Crates Cabinetry	19
Other Wood Products Furniture	17
Paper Products Cabinetry	16
Millwork Furniture Cabinetry	15
Industrial Products & Suppliers Cabinetry	15
Other Wood Products Millwork Furniture Cabinetry	10
Other Wood Products Millwork Furniture	10
Cabinetry Buildings/Structures	10





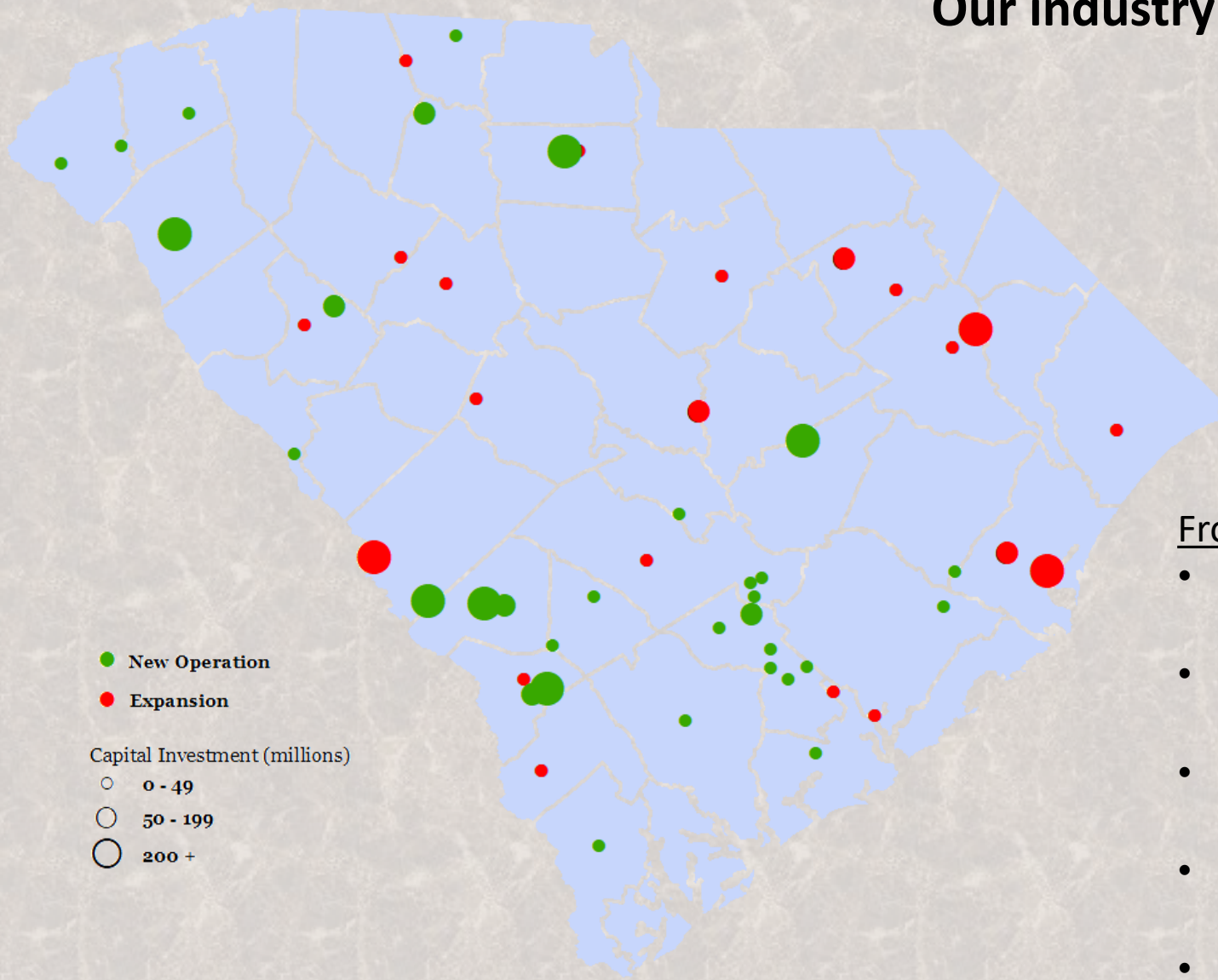
# Number of mills by type, 1989 –Current



\*Includes post and pole, mulch, log export yards, pallet mills, bioenergy and other.



# Our industry is growing...



## From 2004 – Present

- 107 forest product announcements
- 17 greenfield mills (11 primary, 6 secondary)
- 10 sawmill expansions/upgrades
- >\$6 billion in capital investments
- >5,800 new jobs



# South Carolina production of primary timber products 1936-2019

MCF

900,000

800,000

700,000

600,000

500,000

400,000

300,000

200,000

100,000

0

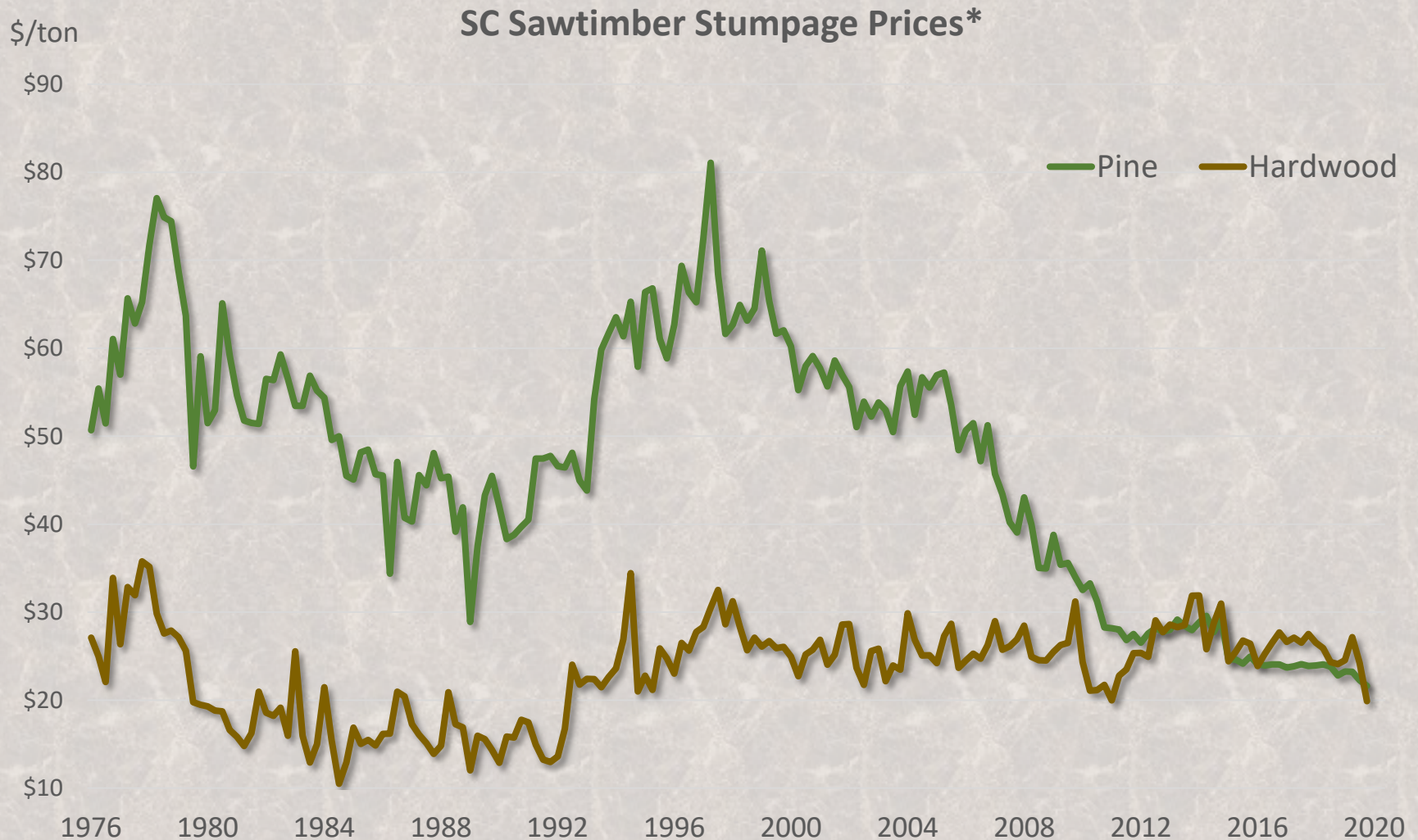
Pulpwood Sawlogs Veneer Logs Composite Panel Post & Pilings Bioenergy Other Industrial

1936 1946 1957 1967 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1994 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2018 2019





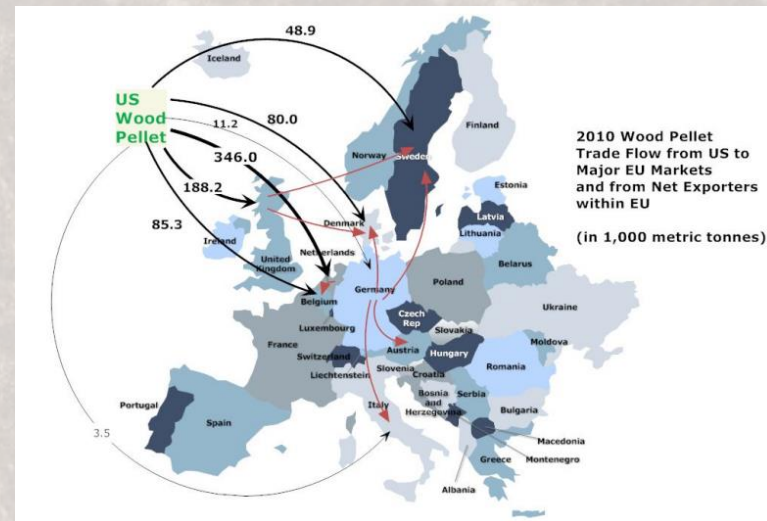
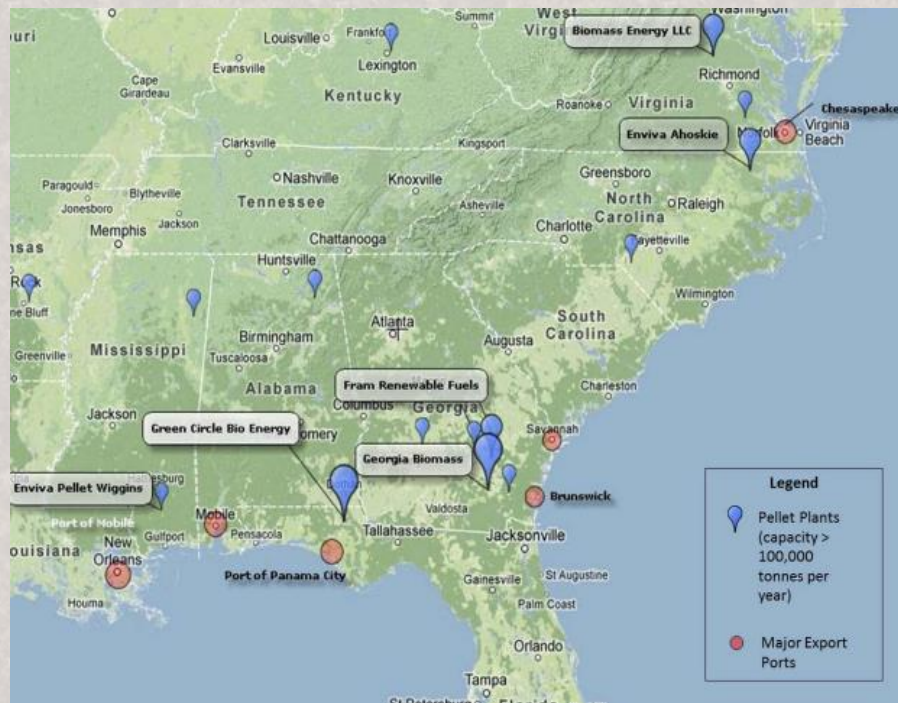
# Stumpage prices not following lumber price trend



*\*based on Timbermart South pricing and adjusted to current value using Consumer Price Index*



# Growth in pellet manufacturing leveling off?



# Log export yards: boom or bust

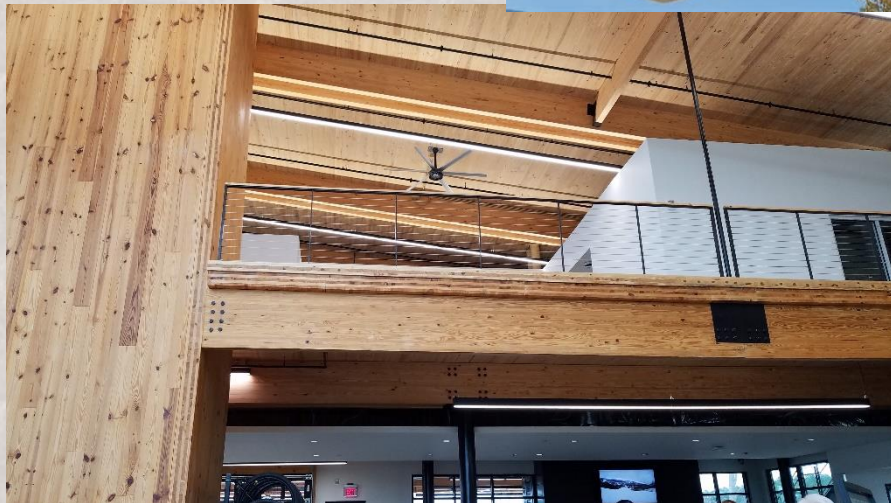




# Engineered wood products are a growth area



Snow Family Outdoor Fitness and Wellness Center  
Clemson University





# South Carolina's future forests





# Increased emphasis on volume/acre

Landowners have more choices in planting stock than ever before....

- Open pollinated orchard mix
- Open pollinated single family
- Control mass pollinated single family
- Clonal seedlings
- Containerized seedling vs bareroot





# Tree planting is increasing

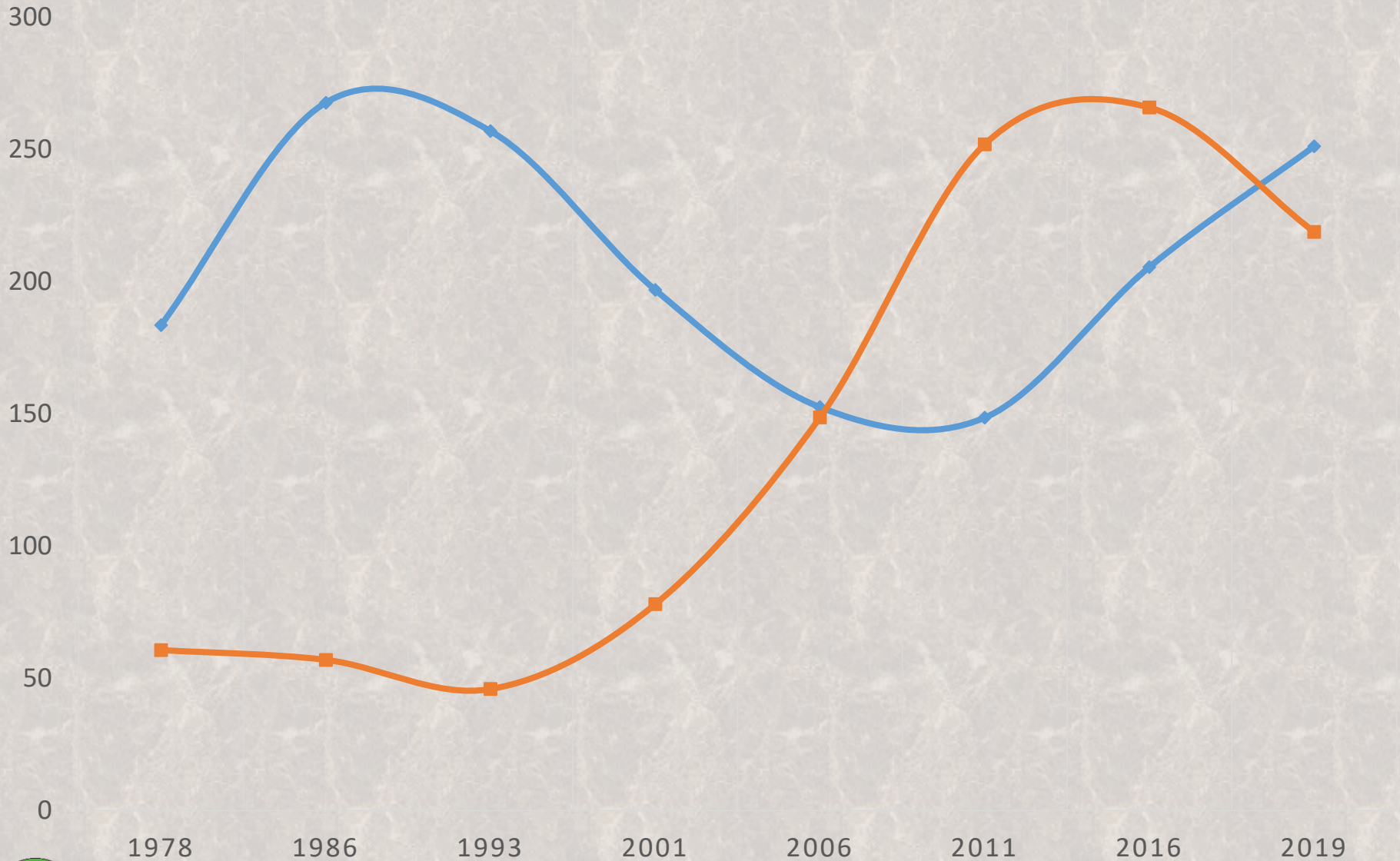
## SEEDLINGS PLANTED IN SC, 1928-2018



## AREA OF TIMBERLAND HARVESTED

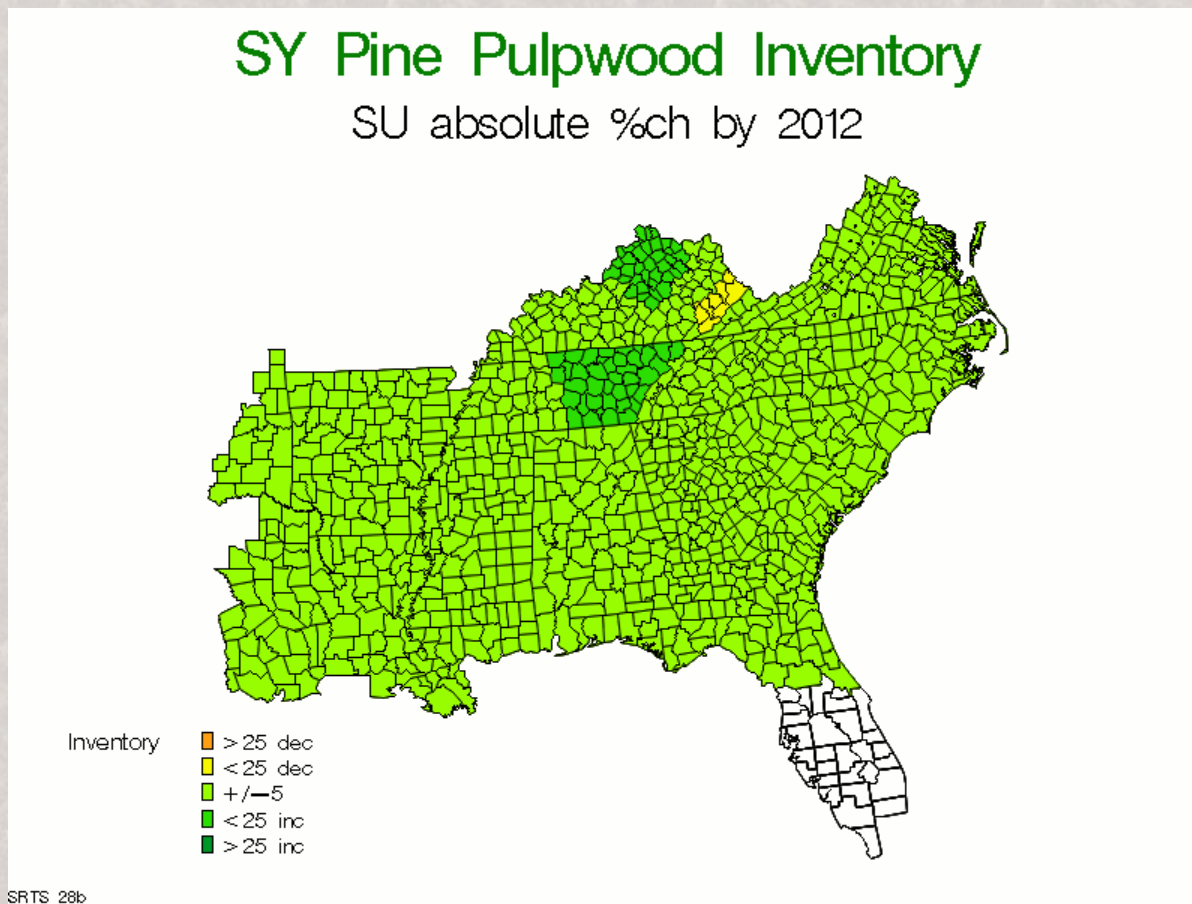
THOUSAND ACRES

◆ Final Harvest    ■ Commercial Thinning



# Sub-Regional Timber Supply (SRTS) Model

“A bio-economic model that integrates Forest Inventory and Analysis data and economic principles to estimate inventory, supply, demand and prices trends.”



*Sample visualization of SRTS results*





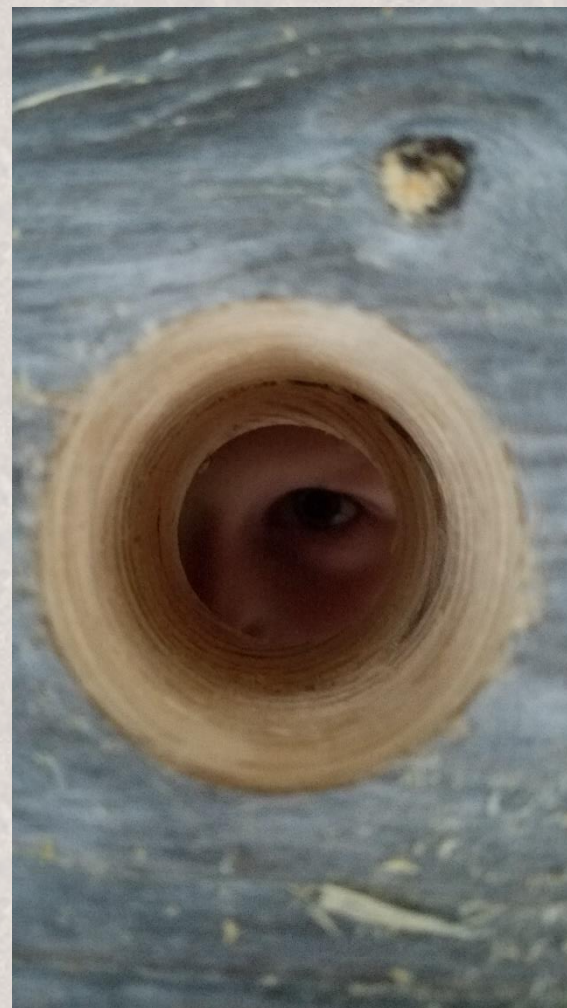
# Sub-Regional Timber Supply (SRTS) Model

Allows users to explore future inventories by:

- Growth of existing inventory modeled over specific time period
- Changes in demand
- Changes in product definitions
- Price
- Other factors (damage assessments)

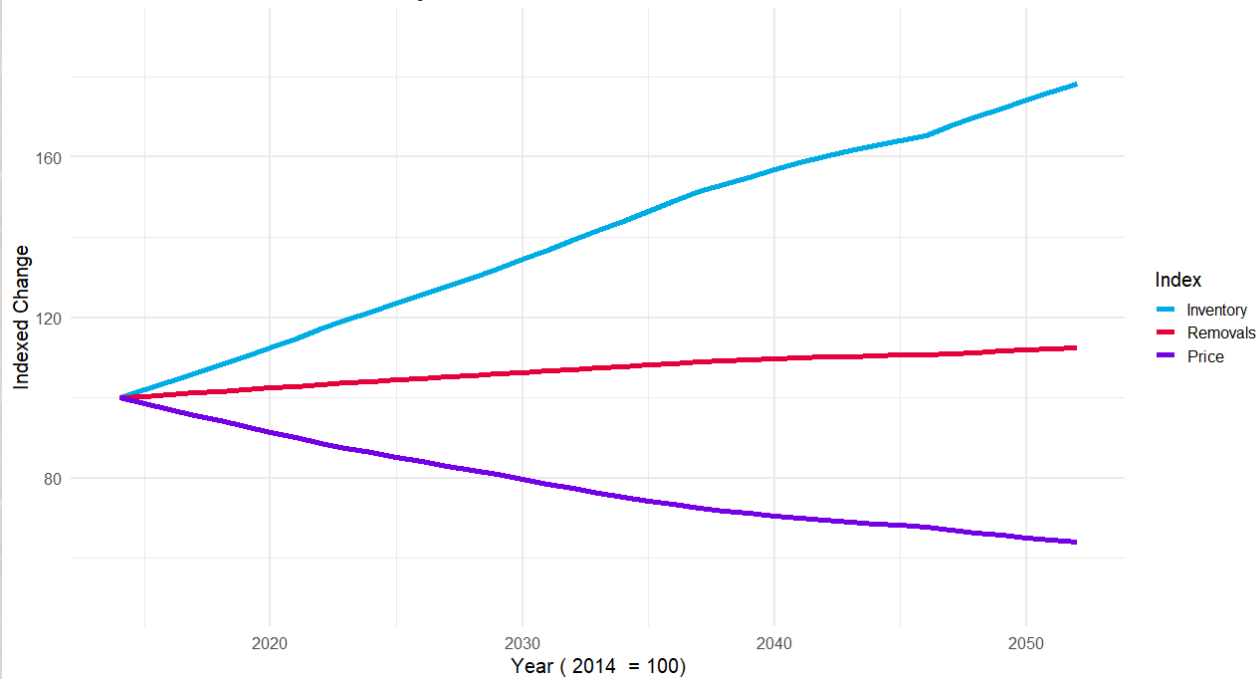
Modeled South Carolina

- 7 custom products
- Known increases in demand
  - New operations
  - Current expansions

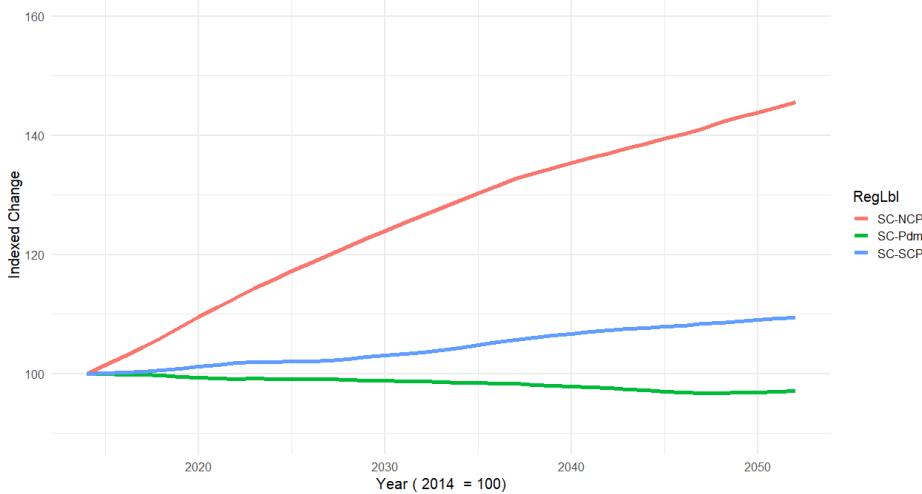


## Hardwood Sawtimber Inventory, Removals and Price

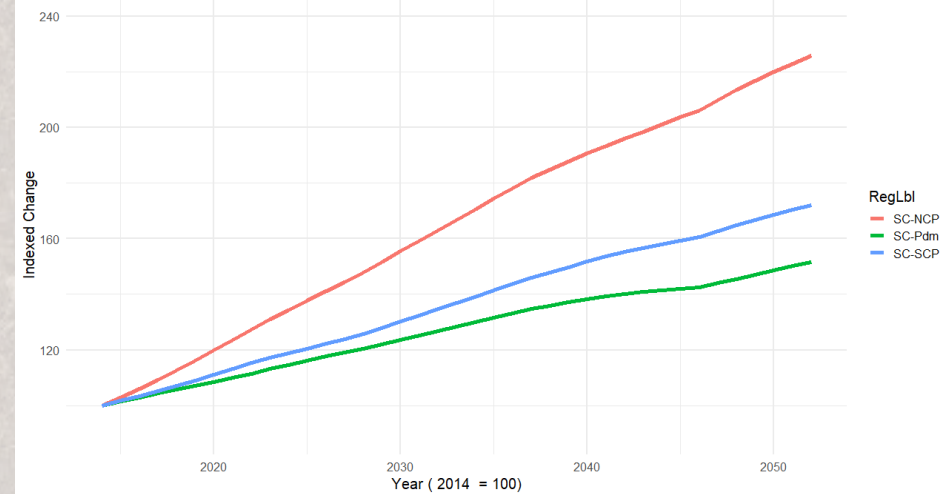
**Hardwood  
Sawtimber  
continues to  
increase**



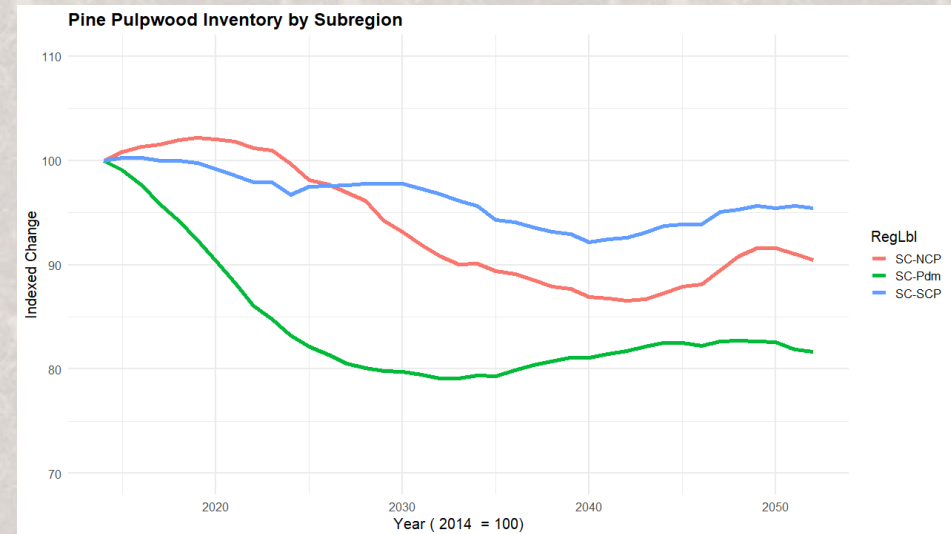
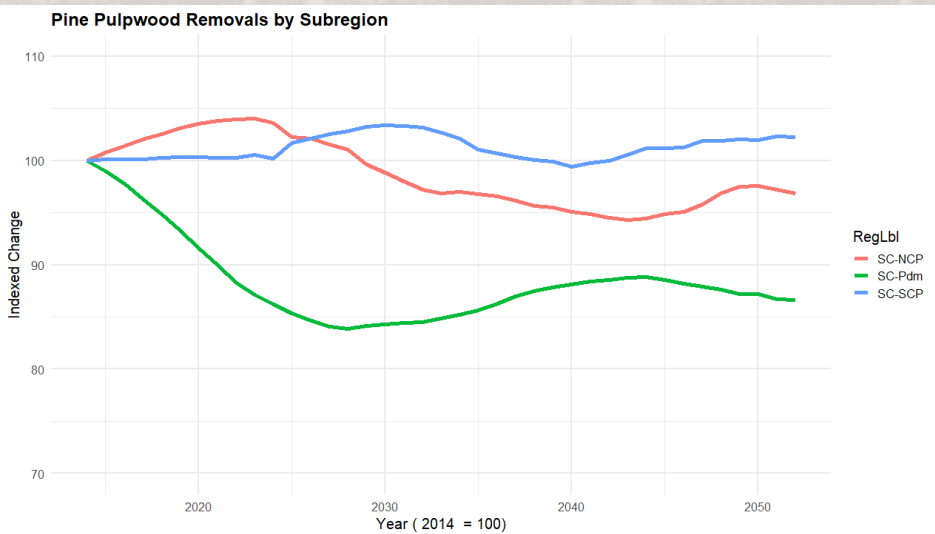
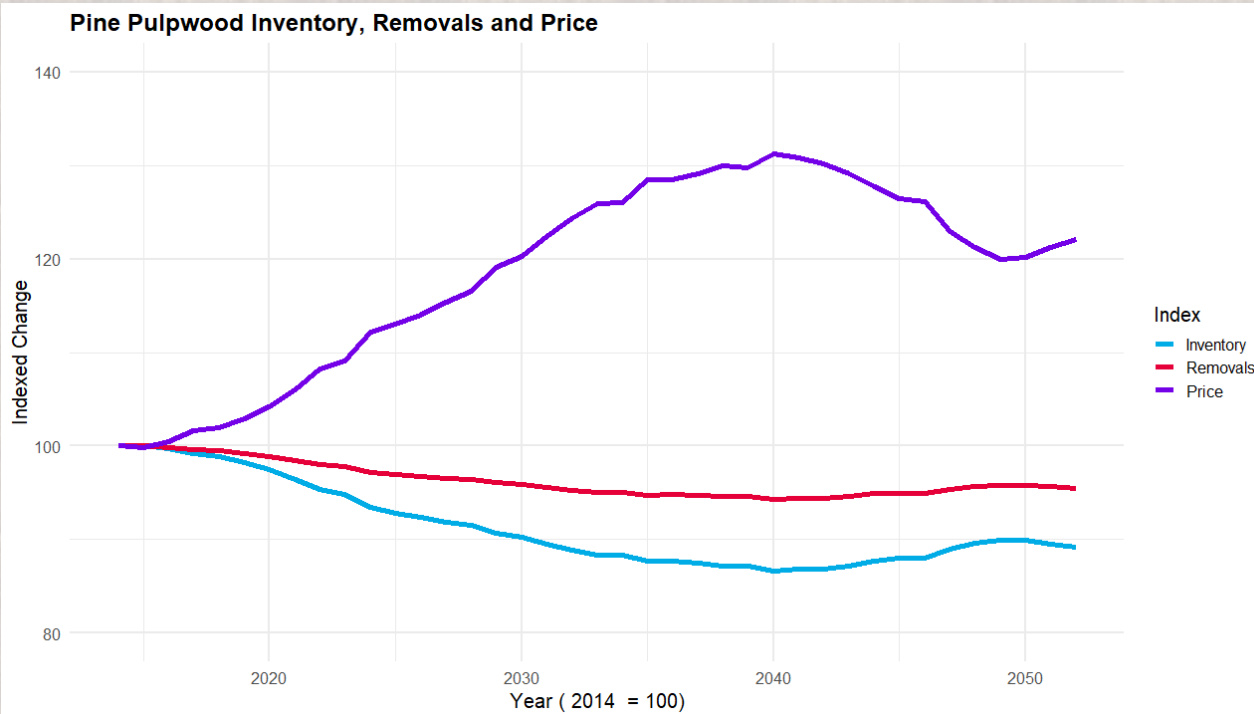
### Hardwood Sawtimber Removals by Subregion



### Hardwood Sawtimber Inventory by Subregion

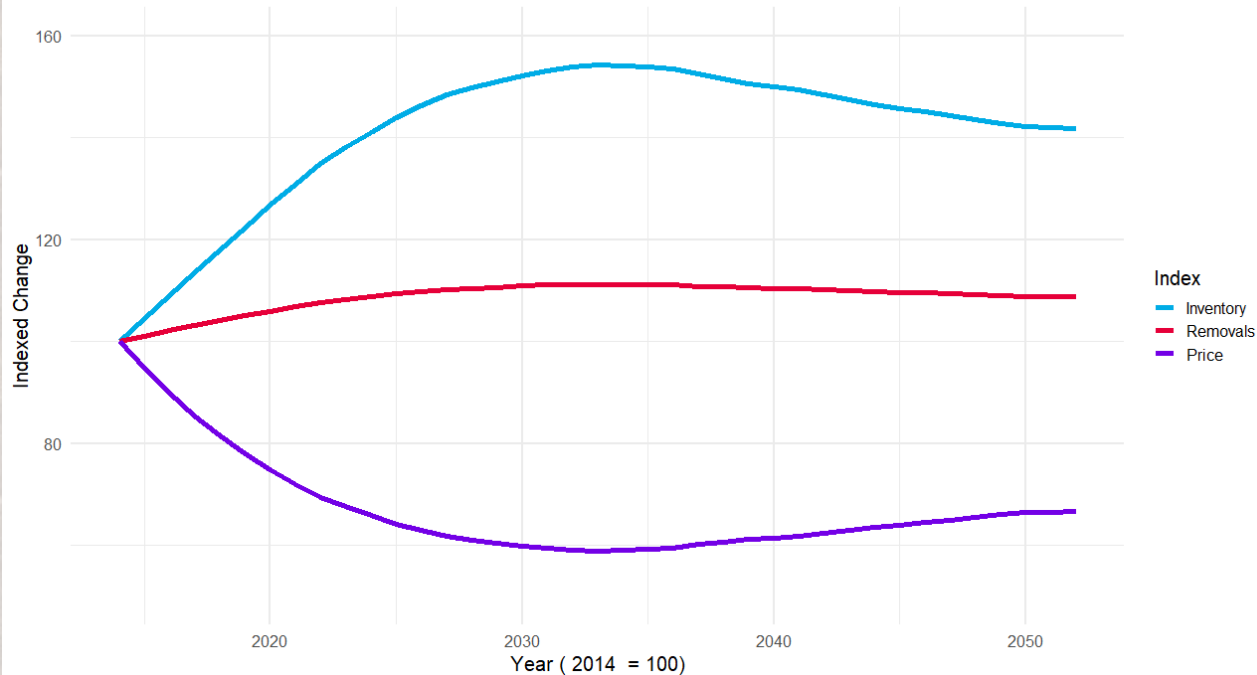


# Pine Pulpwood decreases steadily over next 20 years



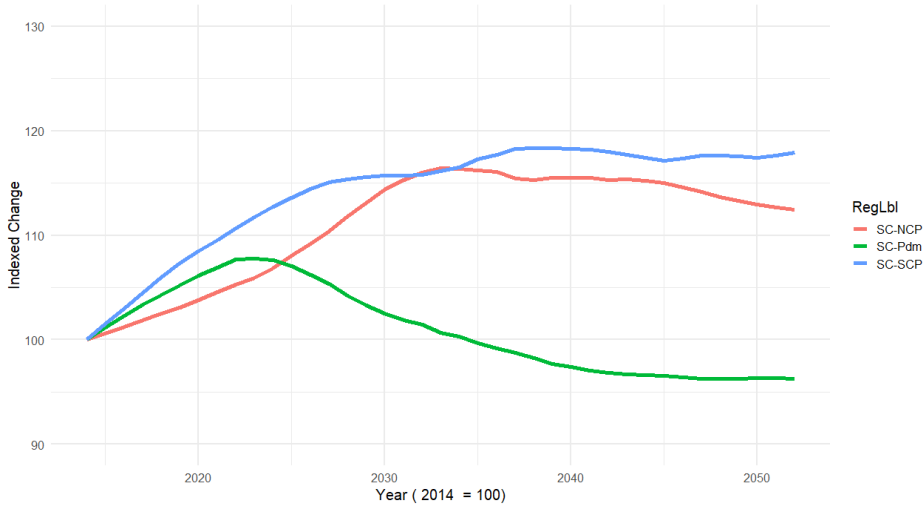


Pine Sawtimber Inventory, Removals and Price

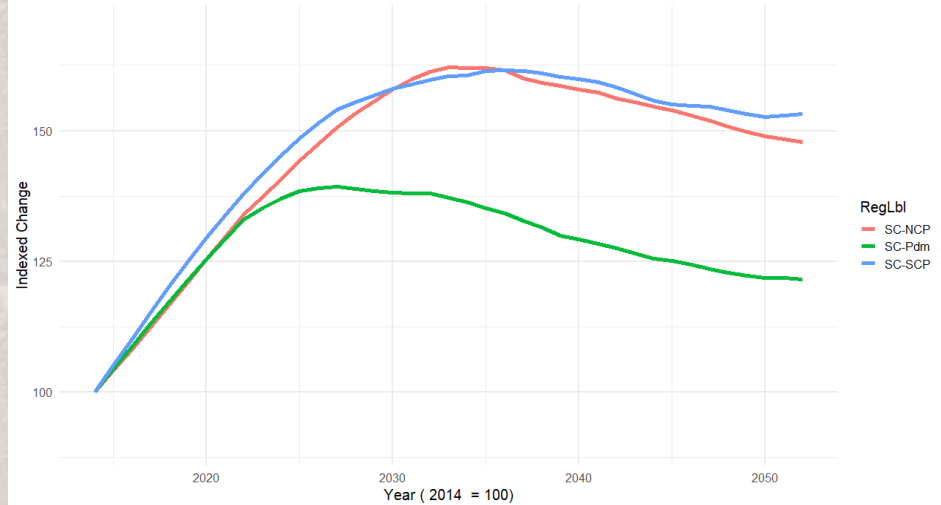


**Pine Sawtimber  
continues to  
increase**

Pine Sawtimber Removals by Subregion

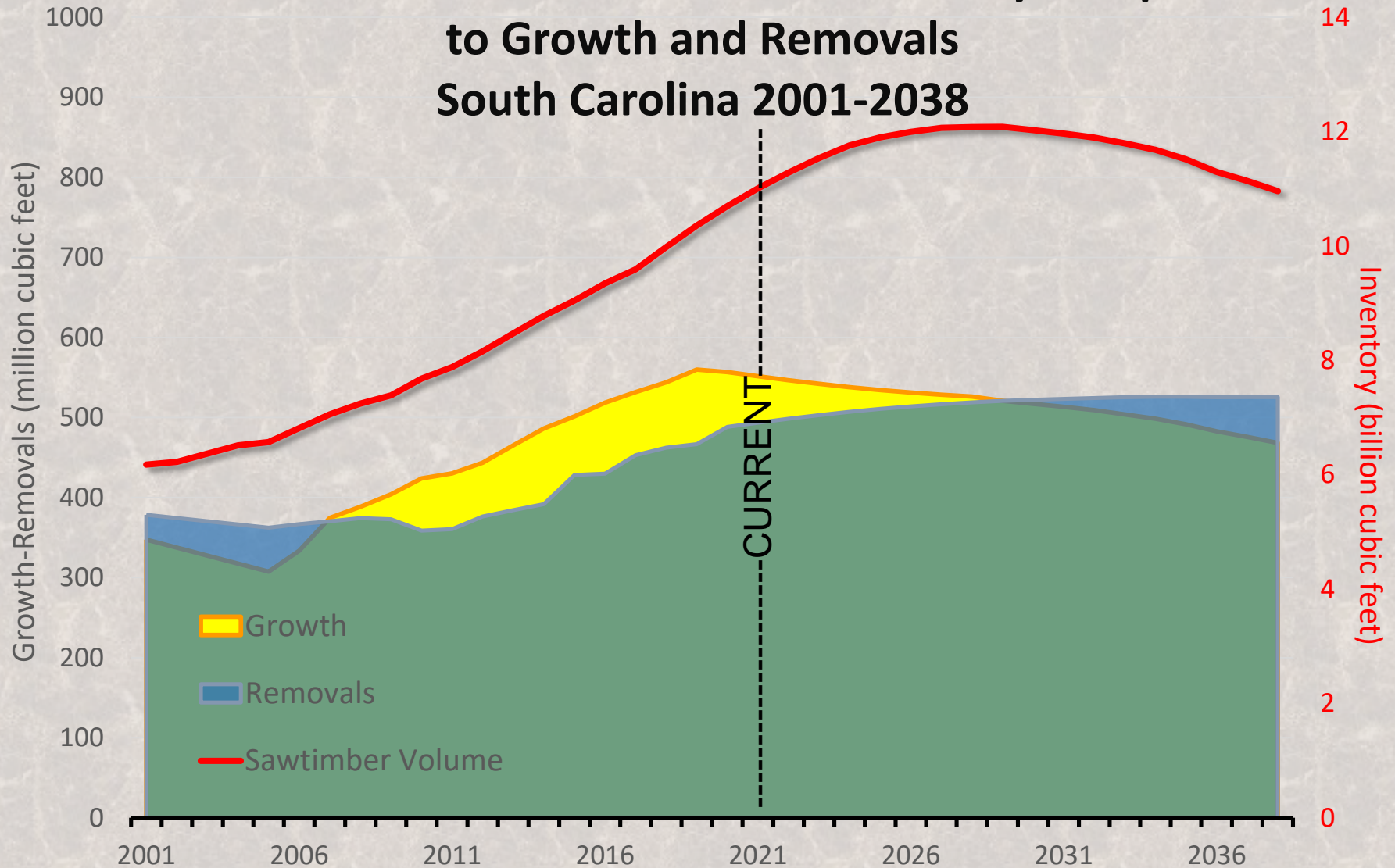


Pine Sawtimber Inventory by Subregion



# Southern Yellow Pine Sawtimber Inventory Compared to Growth and Removals

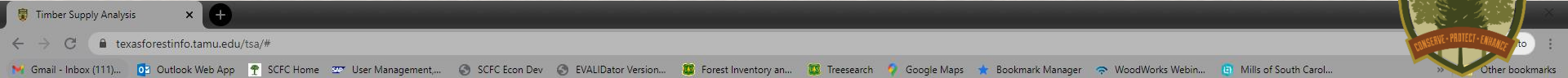
## South Carolina 2001-2038



Sawtimber defined as all merchantable volume 9"+, current volumes from FIA and projections based on SRTS



# The Timber Supply Analysis Tool



Toggle Sidebar

Getting Started

View Map Themes

Evaluate Supply Potential

Step 1. Choose Distance By

- Radius (miles)
- Trucking Time

1 hour

Step 2. Define Area Of Interest

Search for an address or location

-80.8,33.5

+ ADD POINT

CLEAR AREA

Point Coordinates:  
33.5, -80.8

Step 3. Filter State(s)

SC

Step 4. Choose Ownership

All

Step 5. Statistics & Report

35.201954, -84.97763

Decimal Degrees

Legend

Step 5. Statistics & Report

Volume

Weight

SUMMARY STATISTICS

REPORT

South Carolina Land Trust Network, July 15<sup>th</sup> 2021



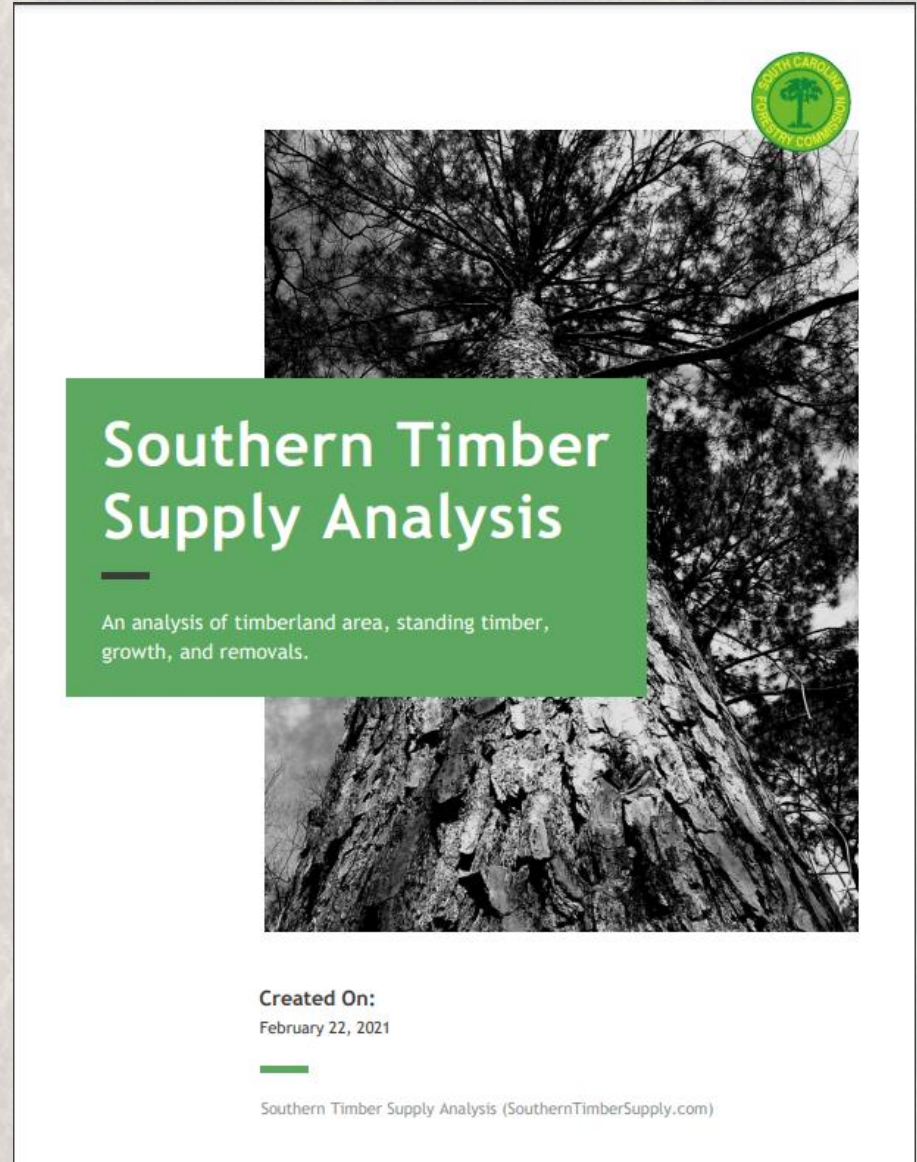
# Customized 16-page report

Includes summary results for:

Area of Timberland by Forest Type  
Standing Timber (weight or volume)

- All Live
- Pulpwood
  - Hardwood, softwood
- Sawtimber
  - Small- and large-softwood sizes
  - Hardwood types (hard and soft)
  - Hardwood Grade (Grades 1,2,3)

Growth and Removals



## Pulpwood

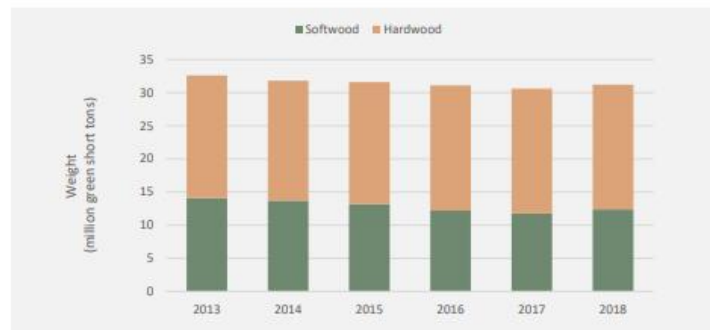
Pulpwood-size trees are used for a variety of purposes with a large proportion used for paper, pulp, and structural panels (e.g., oriented strand board). Pulpwood can be a source of material for some types of biomass-to-energy products, for example wood pellets. Although not included in these estimates, sawtimber-size trees can also be a source of pulpwood, specifically the portion of the bole above the sawlog and below a specified top diameter.

Pulpwood is softwoods with diameter at breast height from 5.0 to 8.9 inches and hardwoods with diameter from 5.0 to 10.9 inches. Weight is the green weight of sound wood, including bark, in the merchantable bole of live trees, from a 1-foot tall stump to a minimum 4-inch top diameter outside bark, or to where the central stem breaks into limbs all of which are less than 4.0 inches diameter outside bark. Rotten, missing, and form cull are not included.

Weight of pulpwood on all timberland in the supply analysis area

Year	Softwood	Hardwood	All
2013	14.1	18.5	32.6
2014	13.7	18.1	31.8
2015	13.2	18.4	31.5
2016	12.2	18.9	31.1
2017	11.8	18.8	30.7
2018	12.4	18.8	31.2

Weight in million green short tons.



## 4. Growth and Removals

### All Live

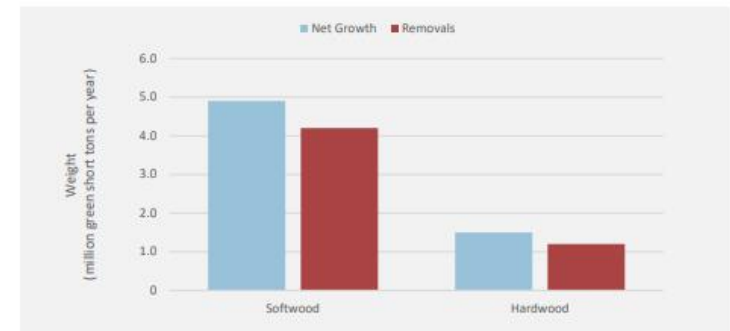
A comparison of net growth and removals provides insight on the sustainability of the resource. Inventory levels are expected to increase over time when net growth exceeds removals. Inventory levels are expected to decrease over time when removals exceed net growth.

Growth estimates are average annual net growth of live trees at least 5.0 inches diameter at breast height on timberland. Net growth estimates are gross growth minus mortality. It is possible for net growth to be negative. For example, net growth may be negative when mortality exceeds gross growth as may happen after a hurricane or other major disturbance. Removal estimates are average annual removals of live trees at least 5.0 inches diameter at breast height on timberland.

Growth and removals of all live trees on all timberland in the supply analysis area

	Softwood	Hardwood	All
Net Growth	4.9	1.5	6.4
Removals	4.2	1.2	5.4
Ratio (G:R)	1.17	1.24	1.19

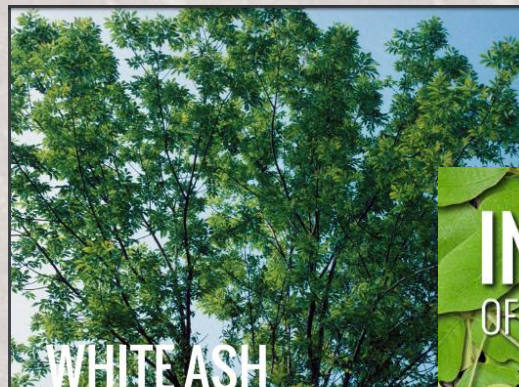
Weight in million green short tons per year.





# FOREST TREES

OF SOUTH CAROLINA



## WHITE ASH FRAXINUS AMERICANA

**Height:** 80-100'

### Characteristics

**Leaf:** Opposite leaf arrangement; compound; 8 to 12 inches long with five to nine oblong leaflets with smooth or fine-toothed margins; upper surface is dark green and smooth; underside is light green to whitish; rachis is jointed at nodes.

**Fruit:** Paddle-shaped samara; light brown.

**Flower:** Dioecious; dark red; males appear in dense clusters; females appear in loose clusters.

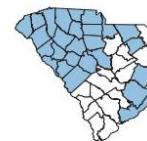
**Twig:** Stout and gray-green; terminal bud looks like a bishop's hat or pinched chocolate chip; lateral buds sit in the leaf scar.

**Bark:** Thick and ashy-gray; finely furrowed into close diamond-shaped areas separated by

narrow ridges that form net-like pattern.

**Location/Other:** Piedmont; lower coasts, stream margins and bottomlands; relatively shade tolerant; more tolerant seedling and less tolerant as an older tree; decimated by the emerald ash borer.

**Use:** More commercial and ornamental than green ash; used for baseball bat veneer, handles, containers and fuel.



172



COMPOUND LEAF

173

## INVASIVE SPECIES OF SOUTH CAROLINA



South Carolina  
Forestry Commission

<http://www.state.sc.us/forest/>





# ARBORGEN TAYLOR NURSERY

2021-2022 SCFC SEEDLING PRICE GUIDE



South Carolina  
Forestry Commission

## Seedlings are available!

## SCFC and ArborGen have joined forces!

### What the partnership means to SC landowners

The South Carolina Forestry Commission is proud to partner with commercial seedling provider ArborGen on the production, sales and delivery of forest tree seedlings for SC landowners. Taylor Nursery, near Trenton, S.C., is still owned by the Forestry Commission, but ArborGen is now providing management services to operate the nursery.

ArborGen is making capital investments to the facility to increase its production capacity; this unique public/private partnership will guarantee SC landowners improved genetics and quality seedlings for years to come.

Under this partnership, the Forestry Commission will determine seedling production for up to 5 million seedlings annually, with 3.34 million seedlings to be grown in 2019-2020. The Forestry Commission will set prices for these seedlings grown specifically for South

Carolina landowners by ArborGen. The prices in this guide will only apply to the first 100,000 seedlings ordered each year by qualified landowners for seedlings to be planted in South Carolina.

***When placing your order, be sure to state if the seedlings are to be planted in South Carolina.***

As always, feedback from you on our seedling program is essential. Please supply ArborGen with your email address when placing your order so we can include you in our annual Seedling Customer Satisfaction Survey at the end of each planting season.

For more information, or if you just have questions about this partnership, please contact SCFC Resource Development Director Tim Adams at (803) 896-8802 or [tadams@scfc.gov](mailto:tadams@scfc.gov).

And don't forget to ask for South Carolina landowner pricing when making your order!



ArborGen  
The Reforestation Advantage

SUPERIOR GENETICS  
BETTER SERVICE  
EXCLUSIVE PRICING

## Taylor Nursery

(803) 275-3578

BE SURE TO ASK FOR  
SOUTH CAROLINA  
LANDOWNER PRICING!



South Carolina Land Trust Network, July 15<sup>th</sup> 2021